

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/913,688	MORINAGA, TAKEO	
	<b>Examiner</b>	<b>Art Unit</b>	
	TANH Q. NGUYEN	2182	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 19,20,25-38,41,43,45,46,48,49 and 51 is/are pending in the application.
- 4a) Of the above claim(s) 25-34,36 and 38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 19,20,35,37,41,43,45,46,48,49 and 51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |  |
|---|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____.                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application  |
| Paper No(s)/Mail Date. _____.   | 6) <input type="checkbox"/> Other: _____.                          |

## **DETAILED ACTION**

### ***Specification***

1. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

Claim 19 recites “wherein said index adding means adds the address including at least one of an address in said hard disk drive in which a just-previous block has been recorded, an address in said hard disk drive in which a current block is recorded, and an address in said hard disk drive in which a just-subsequent block is recorded to said block” in lines 40-45. Claims 35 and 37 also recite similar limitations. Such limitations are recited in the original claims of the application, but are not disclosed in the description section of the application.

The limitations suggest adding three addresses to the same block. At best, FIG. 5 supports an LBA determining unit 104 adding an address to a command in the command buffer 102 and storing the command with the address in the next command buffer 105, the command with the address in the next command buffer being forwarded to a current command buffer 106, then to a previous command buffer 107; and the command with the address in the next command buffer, the command with the address in the current command buffer, and the command with the address in the previous command buffer (i.e. 3 commands or 3 blocks) being forwarded to a selector. Clarification of the limitations and/or amendments of the claims are required.

### ***Claim Objections***

2. Claims 19, 20, 35, 37, 41, 43, 45, 46, 48, 49, 51 are objected to because of the

following informalities:

“extracting the packets” in line 7 of claim 19 should be replaced with --extracting packets-- for proper antecedent basis and for consistency with claims 35 and 37

“index adding means” in line 30 of claim 19 should be replaced with --said index adding means-- to avoid interpretation of a second index adding means in addition to the index adding means in line 18

“a predetermined data amount” in the last line of claim 20 should be replaced with --another predetermined data amount-- to differentiate it from “a predetermined data amount” recited in line 37 of claim 19 (as indicated by applicant in the response)

“a recording device” in line 17 of claim 35 should be replaced with --said recording device-- to avoid interpretation of a second recording device in addition to the recording device in line 14

“using a memory control means to control writing of said stored packets” in lines 10-11 of claim 37 should be replaced with --using a memory control means to control writing of said extracted packets—for proper antecedent basis and for consistency with claims 19 and 35

“a recording device” in line 17 of claim 37 should be replaced with --said recording device-- to avoid interpretation of a second recording device in addition to the recording device in line 14

“a packets transferring control means” in line 25 of claim 37 should be replaced with --using a packets transferring control means-- because claim 37 comprises steps, not elements (see line 3 of claim 37)

"An information processing apparatus according to claim 20" in lines 1-2 of claim 41 should be replaced with --A digital broadcast receiving apparatus according to claim 20-- because claim 20 is directed to a digital broadcast receiving apparatus

"said packets for recording" in line 3 of claim 43, and "outputs said packets" in line 4 of claim 43 should be replaced with --said extracted packets for recording-- and --outputs said stored packets-- for consistency with claims 19-20

"a predetermined data amount" in the last line of claim 45 should be replaced with --another predetermined data amount-- to differentiate it from "a predetermined data amount" recited in line 34 of claim 35 (as indicated by applicant in the response)

"said packets for recording" in line 3 of claim 46, and "outputs said packets" in line 4 of claim 46 should be replaced with --said extracted packets for recording-- and --outputs said stored packets-- for consistency with claims 35, 45

"a predetermined data amount" in the last line of claim 48 should be replaced with --another predetermined data amount-- to differentiate it from "a predetermined data amount" recited in lines 31-32 of claim 37 (as indicated by applicant in the response)

"said packets for recording" in line 4 of claim 49, and "outputs said packets" in line 5 of claim 49 should be replaced with --said extracted packets for recording-- and --outputs said stored packets-- for consistency with claims 37, 48

"An information processing apparatus according to claim 19" in lines 1-2 of claim 51 should be replaced with --A digital broadcast receiving apparatus according to claim 19-- because claim 19 is directed to a digital broadcast receiving apparatus.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 19-20, 35, 37, 41, 43, 45-46, 48-49, 51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 19 recites “a control means” in lines 5-6 and “index adding means, residing outside a central processing unit” in lines 18-19. The claim suggests the central processing unit and the control means to be different entities. The specification does not appear to support the central processing unit and the control means to be different entities. As best understood by the examiner, the central processing unit is the CPU 1 (FIG. 2); and as the control means is used to control the receiving means 13 (FIG. 2), the control means is also the CPU 1. Claims 35, 37 recite limitations that are similar to the limitations of claim 19 above, and are rejected on the same bases.

6. Claims 19-20, 35, 37, 41, 43, 45-46, 48-49, 51 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a

way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. See the enablement rejection above.

7. Claims 19-20, 35, 37, 41, 43, 45, 46, 48, 49, 51 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 19 recites "said hard disk" in line 17. There is insufficient antecedent basis for such limitation in the claim. The examiner suggests replacing "a hard disk drive" in line 2 with --a hard disk of a hard disk drive-- to provide proper antecedent basis.

Claim 19 recites "packets transferring control means for permitting write access of said packets" in lines 29-30. It is not clear what "write access of said packets" means. It appears that --packets transferring control means for permitting write of said packets-- is more appropriate. Claim 35 recites a similar limitation in lines 26-27. Claim 37 recites a similar limitation in lines 25-26.

Claim 19 recites "address determining means" in line 33. Claim 35 recites "address determining means" in line 30. Claim 37 recites "address determining means" in line 29. It is not clear which element or elements in the specification correspond to this means. The examiner requests that applicant points out the element or elements corresponding to this means.

Claim 19 recites "said recording means" in line 34. It appears that --said hard disk-- is more appropriate.

Claim 19 recites "said set address information" in line 38. Claim 35 recites "said

set address information" in lines 35-36. Claim 37 recites "said set address information" in lines 34-35. There is insufficient antecedent basis for such limitation in the respective claims.

Claim 19 recites "said block" in line 45. Claim 35 recites "said block" in line 42. Claim 37 recites "said block" in line 41. There is insufficient antecedent basis for such limitation in the respective claims.

Claim 19 recites "said address information" in line 47. Claim 35 recites "said address information" in line 44. Claim 37 recites "said address information" in line 43. There is insufficient antecedent basis for such limitation in the respective claims.

Claim 35 recites "said hard disk drive" in line 38, in line 40, and in line 41. Claim 37 recites "said hard disk drive" in line 37, in line 39, and in line 40. There is insufficient antecedent basis for such limitation in the respective lines of the respective claims.

Claim 37 recites "said extracting means" in line 21. There is insufficient antecedent basis for such limitation in the claim.

8. The rejections that follow are based on the examiner's best interpretation of the claims. **The examiner further requests that applicant maps the teachings of the specification with the limitations recited in lines 29-47 of claim 19 in order to clarify the scope of the claim and further prosecution of the application.**

#### ***Double Patenting***

9. Claim 41 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 43. See MPEP § 706.03(k).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 19-20, 35, 37, 41, 43, 45-46, 48-49, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant Admitted Prior Art (AAPA: pages 1-9 and FIG. 1) in view of Mergard (US 5,881,248).

12. As per claim 19, AAPA teaches a digital broadcast receiving apparatus [an information processing apparatus - FIG. 1] communicating with a hard disk drive [15, FIG. 1] comprising:

receiving means [12, 13, FIG. 1] for receiving a stream constructed by packets of a predetermined format under control of a control means [CPU 1, FIG. 1];

extracting means [21, FIG. 1] for extracting packets from the packets constructing said stream received by said receiving means;

memory means [23, FIG. 1] for storing said extracted packets for recording;

memory control means [28, 1 - FIG. 1] for controlling writing said extracted packets into said memory means, for controlling reading said stored packets from said memory means [page 5, lines 19-23], for issuing a command to prepare transferring [the host CPU executes the issuance of a command to the hard disk, the setting of the transfer start timing - page 8, lines 24-27], and for supplying a start address of a hard disk [the host CPU executes the setting of the LBA at every block transfer of hard disk



drive 15, FIG. 1 - page 8, lines 24-27];

index adding means [1, 24 - FIG. 1] for adding an address of a sector of a minimum unit of recording on the recording means [the setting of the LBA by the host CPU - page 8, lines 24-27; the address of the minimum unit is expressed by an LBA - page 8, lines 12-13] as an index to said packets read out by said memory control means [LBA being used for address designation to access location on recording means - page 8, lines 1-19], and for outputting said packets having the added address to said hard disk [for outputting said packets using the LBA to the hard disk];

an arbiter [28, FIG. 1] for mediating said packets extracted by said extracting means and stored in said memory means, and for mediating said packets outputted from said memory means to said index adding means in response to an instruction from said memory control means [page 5, lines 19-23];

packets transferring control means [DMA controller - 29, FIG. 1] for permitting write of said packets outputted from said index adding means to said recording means in accordance with said command from said memory control means [page 8, lines 14-16; page 8, lines 24-26], wherein said packets transferring control means includes an address determining means for starting updating an address of said hard disk when said start address is inputted from said memory control means by counting up said address of memory means each time packets of a predetermined amount is transferred [a DMA controller implicitly includes a counter for tracking amount of data transferred as a DMA descriptor/command includes a length of the block transfer];

updating means for updating address information for DMA transfer (A DMA

controller would include a means for updating address information);

wherein said index adding means adds the address including an address of a current block to be recorded to the current block (characteristics of certain DMA controllers); and

wherein said updating means has an internal counter for automatically setting address information (characteristics of DMA controllers).

AAPA does not teach issuing the command before an amount of the packets stored by the memory means reaches a full capacity.

Mergard teaches forming a command when the data amount of the packets stored in the memory means reaches a predetermined capacity in order to prevent the memory from overflowing, the predetermined capacity being less than the full capacity of the memory [col. 7, lines 13-19].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to form a DMA command when the data amount of the packets stored in the memory means reaches a predetermined capacity, as is taught by Mergard, in order to prevent the memory from overflowing.

AAPA does not teach the index adding means residing outside a central processing unit for adding an address (of a sector of a minimum unit of recording on the hard disk) as an index to the packets read out by the memory control means. AAPA essentially does not teach shifting the function of adding an address as an index to packets read out by the memory control means to an index adding means separate from the central processing unit.

Since it was known in the art to shift functions traditionally performed by a central processing unit into dedicated hardware in order to improve overall performance, it would have been obvious to one of ordinary skill in the art at the time the invention was made to shift the function of adding an address as an index to packets read out by the memory control means to a dedicated index adding means (a dedicated hardware separate from the central processing unit) - in order to improve overall system performance.

Alternatively, Dennin teaches a DMA controller integrated with a memory control means [122, FIG. 1; col. 4, line 66-col. 5, line 1] to allow for high bandwidth transfer from a memory means [112, FIG. 1; col. 5, lines 20-21] to a recording means [106, FIG. 1]. A DMA controller traditionally includes an index adding means (i.e. a counter) for adding an address as an index to packets read out from a memory means for recording to a recording means, and a means for outputting the packets having the added address to the recording means. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a DMA controller with a memory control means, as is suggested by Dennin, in order to allow for high bandwidth transfer from the memory means to the recording means - hence including an index adding means residing outside a central processing unit (because the DMA controller is outside the central processing unit and the DMA controller includes an index adding means).

13. As per claim 20, AAPA teaches the memory means including an input FIFO [23, FIG. 1], and the minimum unit of the recording of the data being a sector of a predetermined data amount [page 8, lines 1-3] - hence said transferring of said packets

being made cluster by cluster, the cluster being of a predetermined data amount.

14. As per claims 35, 37, the claims generally correspond to claim 19 and are rejected on the same bases.

15. As per claims 41, 43, AAPA teaches said input FIFO sequentially storing said extracted packets for recording and outputting said stored packets in storing order [page 5, lines 15-17].

16. As per claims 45-46, 48-49, see the rejections of claims 20, 41, 43 above.

17. As per claim 51, AAPA teaches said packets transferring control means further including a register for comparison of address of memory [a DMA controller inherently includes a register for comparison of address of memory to determine whether transfer is complete].

### ***Response to Arguments***

18. Applicant's arguments with respect to claims 19-20, 35, 37, 41, 43, 45-46, 48-49, 51 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANH Q. NGUYEN whose telephone number is (571)272-4154. The examiner can normally be reached on M-F (9:30AM-6:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TARIQ HAFIZ can be reached on (571)272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TANH Q. NGUYEN/  
Primary Examiner, Art Unit 2182

TQN: August 14, 2008